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John C. Stennis Space Center

December 15, 2000



Director's Dialogue

from Center Director
Roy Estess



A Pause, To Give Thanks

How quickly this year has gone! And how much the Stennis Space Center team has accomplished! Last month in this column, I reviewed various dimensions of our growth — a significant new Navy facility, an aerospace industrial center and more. It is beyond any vision we could have ever imagined. So, too, are your accomplishments in this past year — the first of the new millennium.

In testing the Space Shuttle Main Engine, we have continued our critical role in flying the Space Shuttle, the workhorse of human space exploration and the foundation for building the International Space Station. All astronauts and cosmonauts riding to space on the shuttle (which is most of them) continue to do so on rocket engines whose “seal of approval” was granted here at Stennis. Looking to the future, this year we have tested new propulsion technologies for both government and commercial customers. The aerospike engine, hybrid motors and next generation cryogenic engines, among others, promise to revolutionize space travel. It was here at Stennis that they first shook, rattled, and roared.

Based on our accomplishments in commercial remote sensing, this year we were named Lead Center for Earth Science Applications. In this role, we are responsible for unleashing NASA’s significant Earth science capability to solve real world problems for real people — farmers, city planners, disaster managers, etc. This responsibility is a significant opportunity for Stennis to expand our involvement in implementing NASA’s mission.

The year 2000 has seen important strides in other areas in which we benefit our local area, state and nation. We have expanded our support to the local and national education communities both to develop the remote sensing workforce of the future and to make better use of NASA’s unique ability to motivate and equip.

We have reshaped our visitor program and doubled the number of visitors as a result. To share the experience and the power, we have made rocket engine firings available to the public who pays for them. These firings are our own version of a launch — just as compelling, but much more likely to occur on time.

We have much for which to be thankful! I wish you and your family a safe and joyous holiday season. Thank you for your dedication and hard work in America’s space program.

. . .we have made rocket motor firings available to the public who pays for them. These firings are our own version of a launch—just as compelling, but much more likely to occur on time.

NEWSClips

Evidence of Martian land of lakes discovered — In what ultimately may be the most significant discovery yet in the Mars Global Surveyor mission, scientists say high-resolution pictures showing layers of sedimentary rock paint a portrait of an ancient Mars that long ago may have featured numerous lakes and shallow seas. Scientists compare the rock layers on Mars to features seen in the American Southwest. The Mars Global Surveyor mission is managed by the Jet Propulsion Laboratory for NASA’s Office of Space Science in Washington, D.C.

Leaping into the future: One hop at a time — A small hopping robot with frog-like abilities that moves to its desired destination by a combination of rolls and hops may someday hop a ride to an asteroid and leap its way to other planets in the search for water. Under development jointly by NASA’s Jet Propulsion Laboratory and the California Institute of Technology, both in Pasadena, Calif., the frogbot can steer and right itself. One of the major challenges facing engineers is the precision navigation necessary to control the hopping robot. Engineers are also developing a hopper that adheres to and climbs vertical walls and are testing prototypes on different ground terrains.

Microscopic stowaways on the ISS — Long before the first humans boarded the International Space Station (ISS) something else was living there — something unseen, but potentially dangerous. Something capable of attacking the Station’s crew and even the Space Station itself. These life forms aboard the ISS are simply microbes: viruses, bacteria and fungi. Microbes were the first inhabitants of the ISS, according to microbiologists for the Environmental Control and Life Support Systems project at NASA’s Marshall Space Flight Center. Scientists and engineers at NASA must find ways to keep such microorganisms under control.



Shuttle mission helps ISS spread its wings

Space Shuttle Endeavour and its five-member crew opened a new chapter in the saga of the International Space Station (ISS) with their launch on Nov. 30 at 9:06 p.m. CST. On a mission of space-flight firsts, the crew of STS-97 transformed the ISS into a new star on the horizon by adding a pair of giant solar wings to the orbiting platform.

Endeavour carried a 17-ton package of immense solar arrays and associated batteries, electronics and cooling equipment to the space station — the heaviest and largest station elements flown to date.

Now deployed on the ISS, this first set of solar sails measure 240 feet tip-to-tip, a wingspan greater than that of a Boeing 777 jumbo jetliner.

Folded into two boxes only 20 inches thick for launch, the solar arrays contain more than 64,000 individual power-generating cells. The sails being unfurled to their full length was one of the most stunning scenes ever transmitted from Earth orbit.

Veteran astronaut Brent Jett (Cmdr., USN) commanded the mission. Michael Bloomfield (Lt. Col., USAF) served as pilot. They were accompanied by Mission Specialists Joe Tanner, Carlos Noriega (Lt. Col., USMC) and Canadian Space Agency astronaut Marc Garneau.

The largest international scientific and technological endeavor ever undertaken, the Space Station is a permanent laboratory established in a realm where gravity, temperature and pressure can be manipulated to achieve a variety of scientific and engineering pursuits that are impossible in ground-based laboratories. The Space Station will be a test bed for the technologies of the future and a lab-



This artist's rendering depicts the appearance of the International Space Station following array deployment work by the STS-97 crew members. The five-man crew delivered the P6 Integrated Truss Segment, which included the first U.S. solar arrays and a power distribution system. Endeavour's robotic arm was used, and three space walks were conducted.

oratory for research on new, advanced industrial materials, communications technology, medical research and much more.

The ISS is a new star in the night sky, and it grows brighter as each international contribution is delivered to space.

The completed International Space Station will be a permanent orbiting laboratory in space, capable of performing long-duration research in the unique environment of Earth's orbit.

Aboard this international orbiting laboratory, a broad range of research will take place.

Astronauts from many nations will perform fun-

damental medical research, which could potentially benefit all humankind, develop new materials and processes to benefit industries on Earth, and accelerate breakthroughs in technology and engineering that will have immediate, practical applications for life on Earth and will create jobs and economic opportunities worldwide.

On-orbit assembly of the Space Station began Nov. 20, 1998, with the launch of the Russian-built Zarya (Sunrise) control module and will be complete in the 2005-2006 timeframe. The space station orbits the Earth at an inclination of 51.6 degrees to the equator. This orbit has two advantages: It can be reached by the launch vehicles of all the international partners, providing a robust capability for the delivery of crews and supplies to the Station. It provides excellent Earth observation with coverage of 85 percent of the globe and over flight of 95 percent of the planet's population.

When complete, the Space Station will be 356 feet across and 290 feet long. It will weigh about a million pounds and will be able to house up to seven astronauts at one time.

Benefits of the International Space Station:

- ◆ *Sustain U.S. leadership of the global community*
- ◆ *Provide a platform for advances in science and technology*
- ◆ *Meet a deep-seated need of men and women, who have throughout history explored the unknown*
- ◆ *Enhance U.S. economic competitiveness and create new commercial enterprises*
- ◆ *Serve as a virtual classroom in space to the benefit of educators and students alike*

SSC reorganization announced

Announcement of the consolidation of the Commercial Remote Sensing Program and Earth System Science Office to form the Geospace Applications and Development Directorate in October brought form to Stennis Space Center's newest role as NASA's Lead Center for Applications within the Earth Science Enterprise.

The leadership assignment is geared to establish a coherent national applications program to turn remote sensing technical capabilities into practical tools for decision-making by a diverse community of users.

"The consolidation maximizes the synergy among the professionals within the two programs that can be gained from this additional assignment," said Stennis Director Roy Estess.

Stennis Deputy Director Mark Craig will serve as acting director of the new directorate.

Kern Witcher, deputy program manager-operations for the Commercial Remote Sensing Program, and Dr. Rick Miller, Earth System Science Office chief, will continue to manage day-to-day operations of their respective entities until the complete reorganization of the directorate can occur, Estess said.

Additionally, The Education and University Affairs Office is now designated as a staff office and renamed Office of Education.

Additional organizational changes that have already occurred include reassigning the business management and management services functions to the Center Operations and Support Directorate from the Procurement and Business Management Office and Human Resources and Management Services Office, respectively.



Stennis Space Center was recognized at NASA's annual Minority Business and Advocates Award Ceremony for meeting or exceeding all of the center's socio-economic business goals for FY 1999. Receiving the award from NASA Administrator Dan Goldin, left, is Stennis' Procurement Officer Rebecca Dubuisson. This is the sixth consecutive year Stennis has received such an award.

Naval Meteorology and Oceanography has change of command

Rear Adm. Thomas Donaldson took the helm of the Naval Meteorology and Oceanography Command headquartered at Stennis Space Center from Rear Adm. Kenneth Barbor Nov. 16 in ceremonies at the Naval Construction Battalion Center in Gulfport. Rear Adm. Richard D. West, oceanographer of the Navy, was the guest speaker.

Donaldson most recently served as deputy oceanographer of the Navy on the Chief of Naval Operations' staff in Washington, D.C. He is a 1975 graduate of the U.S. Naval Academy and also holds master's degrees from the Naval Postgraduate School and the National War College.

Donaldson previously served as oceans division officer at the Naval Oceanography Command Center, Guam; instructor at the Fleet Norfolk Antisubmarine Warfare Center; oceanographer aboard USS JOHN F. KENNEDY; second force oceanographer on the staff of Commander, Submarine Force U.S. Atlantic Fleet; executive officer and later



U.S. Navy photo

Rear Adm. Thomas Donaldson, left, takes over leadership of the Naval Meteorology and Oceanography Command located at Stennis Space Center from Rear Adm. Kenneth Barbor.

commanding officer of the Naval Atlantic Meteorology and Oceanography Center; and senior oceanography officer detailee and community manager at the Bureau of Naval Personnel.

Barbor, a native of Paducah, Ky., assumed command in October 1997. He retired after nearly 30 years of naval service. Among his accomplishments, Barbor helped increase access to data needed to provide nautical charts for U.S. forces. He also encouraged strong science-related partnerships, including the Northern Gulf of Mexico Littoral Initiative, with industry, academia and other state and federal agencies.

The Naval Meteorology and Oceanography Command is an organization comprised of approximately 3,000 men and women in about 60 locations worldwide. It is Mississippi's only operational Navy command headed by an admiral. The command's largest activity, the Naval Oceanographic Office, also located at Stennis Space Center, is one of the five largest supercomputer centers in the world.

Austill helps Stennis Director stay on top of hectic agenda

Janet Austill loves a challenge. So, the hectic pace of her position as secretary to the director of Stennis Space Center suits her well.

A steady stream of phone calls are the audio background of her work day, as she schedules meetings, handles requests and manages the itinerary for one of the busiest men in the state and throughout NASA — Stennis Space Center Director Roy Estess.

"Whatever I can do to relieve Mr. Estess of some of his burden is what I want to do," Austill said.

The hard work of the year 2000 has brought accomplishments of all sizes to Stennis, she said. Along with the opening of StenniSphere and the Lockheed Martin announcement of a new Propulsion, Thermal and Metrology Center at Stennis, smaller events of importance to the community also factored high on Austill's list of center achievements.

"I especially enjoyed the Boy Scout Jamboree," Austill said, also noting a gathering of Girl Scouts around the same time. "Mr. Estess didn't have to do those things, but he did."

A NASA employee at Stennis Space Center since July 1981, Austill moved to her current position in February 1997.

"I like a challenge," Austill said of her decision to come to the director's office.



Janet Austill



Stennis Employee Profile

Austill also said she appreciates the work culture at NASA.

"I've always enjoyed being part of NASA," she said. "You know you're working with good people. NASA also encourages an open exchange of ideas and the freedom to fail — as long as you learn something valuable from the experience."

While Austill thrives on challenges at work, she also has found an outlet for her energy away from work. During the year 2000, she has served as president of the board of directors for the East St. Tammany Habitat for Humanity, a group which she has been part of for three years. Austill is part of a volunteer workforce that has built three homes this year for needy families in the East St. Tammany area which includes the towns of LaCombe, Pearl River and Slidell.

"It's definitely a feeling of accomplishment when you see a house go up and a family move in," Austill said.

"The excitement of these new homeowners is obvious when they bring cameras in to the closing for their home," she said.

While Austill readily admits hammering and sawing are not her forte, she does bring her considerable administrative skills to bear in the process of screening, selecting and working with families to bring their dreams of a home to reality.

Family has always been a strong tie for Austill. Raised on a farm in Edwardsville, Ill., she came south in 1979 with her husband, Bill, and her two children, Dawn and Scott. Now widowed and both children grown with families of their own, Austill lives in Pearlinton and visits her children when she can.

"I just came back from Fort Wayne, Ind., visiting Dawn and her family for Thanksgiving," Austill said. Dawn has a son, Devin, 4, and a daughter, Delaney, 9 months, providing Austill with two grandchildren to enjoy.

"They're both at fun ages," she said.

Her son, Scott, and his wife live in Pearlinton.

At home, when she isn't working with Habitat for Humanity, Austill enjoys working in her yard — all two acres of it — and reading suspense novels. She also enjoys caring for and playing with her three dogs: Allie, Mac, and Buddy.

The Stennis Federal Women's Program Advisory Council recently held an open house and membership drive to enhance employment and advancement opportunities for women. The Federal Women's Program is dedicated to alleviating problems unique to women in the work place and to improving the status of women employed at the center. Stennis Deputy Director Mark Craig, left, and Stennis Federal Women's Program Chairperson Rhonda Foley share in the unveiling of the NASA Stennis Space Center Women of 2000 poster. Copies of the program posters are available by contacting Foley at Ext. 1081.



Partnerships, expansion and extraordinary achievements describe Stennis Space Center in

2000

The John C. Stennis Space Center is feeling positive results from an ambitious year of construction, expansion and collaboration. As Stennis continues to evolve, the center is seeing tremendous growth by existing tenants and is welcoming new agencies, companies and organizations. In 2000, employment figures at the center reached nearly 4,500. And, the 1999 economic impact figures released earlier this year showed that Stennis Space Center had a direct global impact of \$625 million, with an impact on local areas within a 50-mile radius of \$405 million.

"Our facility and the many employees who work here can be proud of our growth and prosperity, and equally as proud of the important work they do every day to heighten the quality of life for our surrounding communities and for us," Stennis Space Center Director Roy Estess said.

New Business

In March, The Boeing Company dedicated its new \$11 million RS-68 Engine Assembly Facility at Stennis Space Center, underscoring an unprecedented government/industry partnership. The assembly plant's opening marks the first time engines will be assembled and then tested at Stennis.

The Lockheed Martin Corporation announced in September the decision to locate its Advanced Propulsion, Thermal and Metrology Center at Stennis. This effort resulted from collaboration among Lockheed Martin, the State of Mississippi, Hancock County and NASA to develop the planned center that will bring an additional 270 jobs to south Mississippi.

Also in September, groundbreaking ceremonies were conducted to kick off a \$25 million construction project for facilities to support the Department of Defense's Naval Small Craft Instruction and Technical Training School (NAVSCIATTS) and Special Boat Unit TWENTY-TWO.



The Boeing Company dedicated its new RS-68 Engine Assembly Facility at Stennis with ribbon cutting ceremonies, above. The event underscored just one of the unprecedented government/industry partnerships being created at Stennis.



In September, Lockheed Martin announced plans to build its Propulsion, Thermal and Metrology Center. This effort resulted from collaboration among Lockheed Martin, the State of Mississippi, Hancock County and NASA to develop the planned center.



In September groundbreaking ceremonies were conducted to kick off a \$25 million construction project for facilities to support the Department of Defense's Naval Small Craft Instruction and Technical Training School (NAVSCIATTS) and Special Boat Unit TWENTY-TWO.

YEAR END . . .

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Propulsion

Early this year, delivery of a 28-ton flame deflector to Stennis Space Center for use on the E-2 cell 2 test stand signaled one of the first visible signs of progress for construction of a new test cell that was completed in May. The new structure serves as a new MC-1 (formerly Fastrac) 60,000-pound thrust vertical test position. The MC-1 will power the new, unpowered X-34 technology demonstrator.

Final phases of testing the Hybrid Sounding Rocket (HYSR) were conducted in April. The HYSR rocket engine uses a combination of both solid fuel and liquid oxidizer, capitalizing on the advantages of each. The engine was developed by Lockheed Martin Space Operations for sub-orbital space and atmospheric science missions.

Development testing of the RS-68 is continuing in support of Boeing's Expendable Launch Vehicle, the Delta IV, scheduled for a first launch in late 2001. The Delta IV Common Booster Core has been installed, and testing should begin by the end of this year.

A major milestone was reached when testing of a new high-pressure fuel turbopump for the Space Shuttle's Main Engines was completed in May. The Pratt & Whitney high-pressure fuel turbopump achieved every objective in the final series of certification tests. The successful test raises the turbopump's cumulative testing to 12,335 seconds.

More than 5,000 public spectators witnessed first-hand the "shake, rattle and roar" of the Space Shuttle's Main Engines when the center offered them the opportunity to come onsite and view test firings in July and November.

Stennis began testing the TRW 650K Low Cost Pintle Engine at the E-1 Component Stand under a cooperative agreement with NASA's Marshall Space Flight Center in September. This LOX/LH2 engine, with a chamber outside diameter of 68 inches, is one of the physically largest engines ever tested in the U.S.

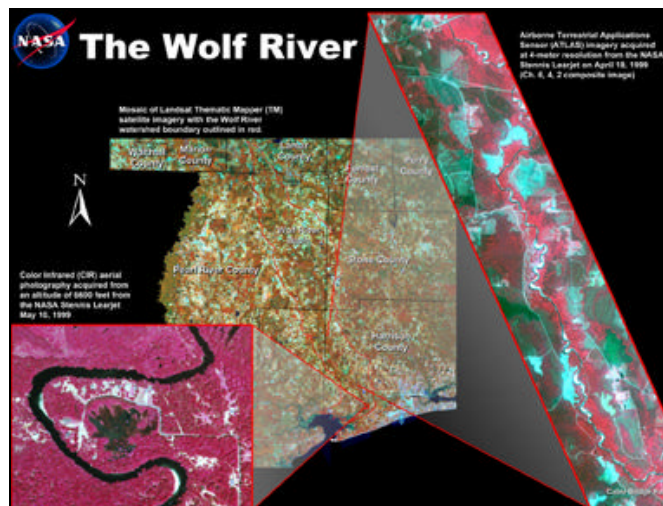
The final test phase for qualifying the The Boeing Company, Rocketdyne-developed linear aerospike flight engines that will power the NASA/Lockheed Martin X-33 technology demonstrator moved one step closer in October. Technicians at Stennis completed dual-engine assembly and delivered the engines to the A-1 test stand, where they were mounted for testing to begin in January.

Commercial Remote Sensing Program

In January, the Stennis Commercial Remote Sensing Program (CRSP) launched a government/industry partnership with the potential to benefit more than 100,000 of our nation's farmers. The partnership, among NASA, USDA and four national associations representing cotton, corn, soybean and wheat growers, is designed to develop remote sensing information products for farmers that will increase efficiency in commodity production.



The Propulsion Test Directorate had its hands full with the successful completion of the testing phase of the TRW 650K — the second largest engine ever tested at Stennis.



Earlier this year, Stennis' Commercial Remote Sensing Program and the Wolf River Conservation Society Inc. reached an agreement to investigate how emerging commercial space technologies can help preserve the river habitat. The Wolf River runs from Lamar County to the Bay of St. Louis in Hancock County. It is Mississippi's first officially designated scenic river.

Stennis Space Center's Commercial Remote Sensing Program and the Wolf River Conservation Society Inc. announced in April efforts to utilize IKONOS satellite data to investigate how emerging commercial space technologies can help preserve the state's first officially designated scenic river. Products will be created from IKONOS that can address the conservation management needs of the society.

In May, CRSP announced the development of a new Web site devoted to sharing the practical uses of Global Positioning System (GPS) technology, called the GPS Application Exchange. The Web site can be found at <http://gpshome.ssc.nasa.gov>.

Earth Sciences

Scientists from Stennis' Earth System Science Office teamed with Tulane University in New Orleans in May to conduct a Mississippi River Interdisciplinary Research survey cruise in the Gulf of Mexico. The research was made possible through a grant from the Office of Naval Research, and its purpose was to look at the impact of the fresh water from the Mississippi River — with all of its dissolved organic materials, suspended sediments and particles — on the near shore saltwater of the Gulf.

YEAR END . . .

(Continued from Page 7)

Two NASA scientists with NASA's Earth System Science Office at Stennis Space Center were issued a patent in February for the Hand-Held Plant Stress Monitor. This research is significant in that early detection of plant stress could lead to healthier forests and more productive farms.

Technology Transfer

The NASA Technology Transfer Office at Stennis announced in February a license award to a Picayune Internet provider to further develop a NASA image processing software to develop a commercial application for NASA's Hall of Fame award-winning Earth Resources Laboratory Applications Software package developed at Stennis Space Center.

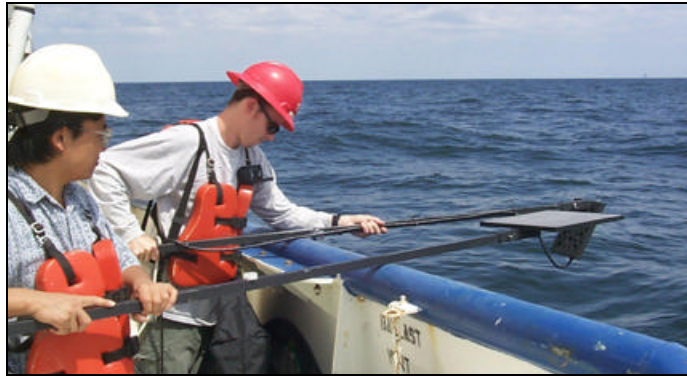
The Technology Transfer Office announced in February an exclusive license agreement with a Plainfield, Ill., company to commercialize the Hand-Held Plant Stress Monitor developed and patented at Stennis Space Center. The technology can detect stress up to 16 days before plant deterioration is visible.

Scientists from Stennis and representatives of a Texarkana, Texas, company took to the air over Mobile Bay in March to test commercial modifications to the Multispectral Telescope and Portable Video Imager. In August last year, the company received Stennis' first "dual-use" license for commercialization of the portable video imager. The flight was the first test of the company's progress in converting the NASA-developed technology to commercial use.

In April, the Technology Transfer Office announced that a Jackson company signed a non-exclusive license with Stennis for industrial use of a process that will be used to create a new thermometer. The thermometer called the TL-9002 is currently under development and is predicted to be on the market by early 2001. The license with NASA is for use of an imbedded software algorithm that speeds up the processing capabilities of sensor technologies used also by NASA to speed up hydrogen detection system sensors.

Education

NASA's Education and University Affairs Office at Stennis saw many accomplish-



Scientists at Stennis participated in an interdisciplinary river survey project in the Gulf of Mexico.

Scientists with NASA's Earth System Science Office work with a company on a plant fluorescence sensor that can be used to monitor and improve the health of crops.



NASA engineers were among those working with the Education and University Affairs office at Stennis to help with the design and construction of Gulfport High School students' entry in the FIRST Robotics Competition.

ments this year. In January, The National Association for the Education of Young Children accredited the Stennis Child Development Center. The ranking makes the child care center one of just 7 percent of early childhood programs in the country to achieve the organization's standard of excellence.

Stennis Space Center was also selected as a judging site for one of five national competitions sponsored by the NASA Student Involvement Program (NSIP).

NSIP is a national program of investigations and design challenges that links students with NASA's diverse and exciting missions of research, exploration and discovery. A team of NASA scientists and engineers judged more than 80 entries in the

Aeronautics and Space Science Journalism category.

Stennis sponsored five Mississippi schools at the regional FIRST Robotics Competition, and engineers from NASA and Mississippi Power worked with the winning Gulfport High School team in creating "Flash," the robotic entry that took top honors in the FIRST Robotics Competition.

NASA's Office of Education was also the recipient of its sixth National Performance Review Hammer Award, this one for promoting Stennis Space Center's Workforce Development in Education and Training Initiative.

YEAR END . . .

(Continued from Page 8)

Environmental

NASA's Environmental Office at Stennis coordinates all of the space center's environmental activities and oversees activities that include environmental outreach; air quality, natural resources, hazardous waste and noise management; pollution prevention; chemical and fuel control; recycling and conservation initiatives; and cleanup from past practices.

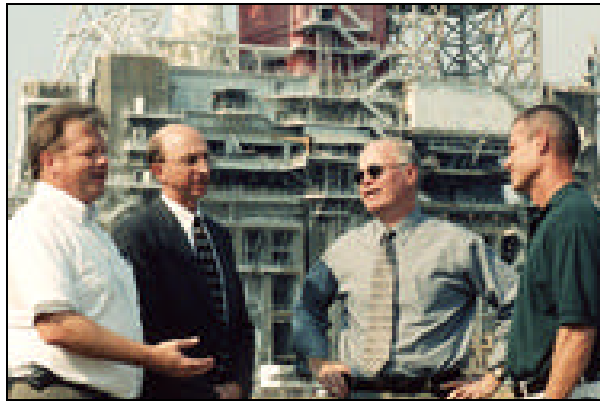
Earlier this year, the Environmental Office received a Citation of Excellence award from the 1999 Mississippi Gulf Coast American Advertising Federation for its newly designed web page that can be seen at www.ssc.nasa.gov/environmental.

Stennis was selected in April as one of five NASA sites to participate in a pilot program aimed at redesigning federal Environmental Management Systems based on ISO 14000 standards. Over the course of the next year, the Environmental Office will lead efforts at SSC to look at all processes within NASA and NASA contractor activities to see how they match with new EPA requirements.

As a result of the Environmental Office's efforts, Stennis was nominated for the White House Closing the Circle Award 2000 for its successful on-site recycling program. The program was developed to recognize federal employees and their facilities for outstanding efforts that resulted in significant contributions to, or impacts on the environment.

StenniSphere

StenniSphere, the newly redesigned visi-



NASA's Environmental Office at Stennis worked with the state Department of Environmental Quality to implement an environmental management system.

During its first six months after opening, StenniSphere has hosted more than 140,000 visitors. Among them were participants in the Girl Scout "On Time 2000" Jamboree. Here, Girl Scouts take the controls of the Space Shuttle cockpit to successfully land a shuttle.



tor center, opened Memorial Day weekend to record crowds and quickly surpassed all attendance expectations. Within the first six months of its opening, the attraction has already hosted more than 140,000 visitors.

In an unprecedented agreement among NASA, the Mississippi Department of Economic and Community Development's Division of Tourism and the Mississippi Transportation Department, visitors now begin their tour of Stennis Space Center from the Mississippi I-10 Welcome Center in Hancock County.

Former Apollo astronaut and Biloxi native Fred Haise participated in the dedication of a Lunar Lander exhibit at the Hancock County I-10 Mississippi Welcome Center in May.

This year, members of the Hancock County Retired Senior Volunteer Program began working as part of the Stennis team greeting visitors, answering questions, supporting the new I-10 Launch Pad building from where all StenniSphere tours originate and assisting with the daily activities of StenniSphere.



Lockheed's Julia Lewis found out about six months ago that she had cancer. In a show of support, nine of her co-workers shaved their heads when her chemotherapy treatments began to make her hair fall out. Among them are, front row from left, Cheley Carpenter, Lewis, Gary Bennett; second row, Charles Brown Jr., Bill Camus, Bruce Staten, Kerry Gallagher; top row, Mike Martin, Gene Wagner and Todd Stefanski.

Bureaucratic Survivor Games



Teams of
NASA
employees
squared
off for
Bureaucratic
Survivor

Games as part of NASA's Fourth Annual Employee Appreciation Day on Nov. 17 hosted by managers, who cooked and served the food. The team called **Revenge of the Nerds** — made up of Toni Watkins, Kathy Slade, Diane Sims, Mary Byrd, Pat Ryan, Tim Pierce, Richard Harris and James Cluff — won the competition.

QUICK LOOK

■ **The 2000 Stennis Christmas Drive** is under way. Representatives are needed to coordinate the efforts for the respective organizations at SSC. Organizers would like to close out collections by Monday, Dec. 18. Distributions by the community organizations are usually made the weekend before Christmas. Please call Joyce Lawrence with Boeing at Ext. 2195 for additional information.

■ **Hope Haven is making ready for the holidays.** The Federal Women's Program has received the Wish List from the Hope Haven children. There are five children with two more expected before Christmas. To help or for more information, call Ext. 2364.

■ **A breast cancer detection system** and a personal search-and-rescue beacon represent the range of NASA's 42 most recently commercialized products featured in the 2000 issue of *Spinoff*, the annual publication that highlights commercial products developed from NASA technology. Online versions of *Spinoff*, beginning with the 1996 issue, are available at: www.sti.nasa.gov/tto/spinoff.

LAGNIAPPE

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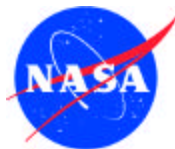
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